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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,386	08/08/2001	Yasuo Wada	0229-0656P	2324

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EXAMINER

FISCHER, JUSTIN R

ART UNIT PAPER NUMBER

1733

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,386

Applicant(s)

WADA, YASUO

Examiner

Justin R Fischer

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 and 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claim 3 is cancelled per Amendment A on August 5, 2003.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, and 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minami (EP 985,556, newly cited). As best depicted in Figure 7, Minami substantially teaches the claimed pneumatic tire construction, including a single carcass ply 6, a bead apex 8 having a height of between 0.2 and 0.4 times the tire section height (translates into claimed apex length), and a reinforcing cord layer 9 composed of a single ply of cords and disposed axially inside of the carcass turnup portion 6b, wherein (a) the radially inner end of said reinforcing cord layer is disposed axially outward of the bead core and axially inward of the outer end of the bead apex and (b) the radially outer end of said reinforcing cord layer is disposed axially outward of the outer end of the bead apex and axially inward of the tire maximum section width point. It is noted that while Figure 7 depicts the radially outer end of said reinforcing cord layer as being slightly outward of the tire maximum section width point, the reference more broadly teaches that the radially outer end can be disposed at a point between 0.3 and 0.5 times the tire section height (Page 9, Paragraph 66). One of ordinary skill in the art at

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the time of the invention would have found it obvious to manufacture a tire construction of Minami in which the radially outer end of said reinforcing cord layer is radially inward of the tire maximum section width point in view of the range disclosed by Minami. In this same regard, it is well recognized in the tire industry that the maximum section width point is commonly arranged at a position that is approximately equal to 0.50 times the tire section height. Thus, in view of the range disclosed by Minami and the well known constructions of current tires, one of ordinary skill in the art at the time of the invention would have found it obvious to arrange the radially outer end of the reinforcing cord layer inward of the maximum section width point. Furthermore, it is evident from Figure 7 of Minami that the minimum sidewall thickness occurs slightly radially inward of the maximum section width point, such that in the above noted instances, the minimum sidewall thickness would exist at a position between the radially outer end of the reinforcing cord layer and the maximum section width.

Regarding the newly presented triangle arrangement, Figure 7 of Minami clearly depicts a region Y1 radially outward of the bead apex in which the main carcass portion, the reinforcing cord layer, and the turnup carcass portion form such an arrangement.

As to the protruding portion of the reinforcing cord layer (that portion radially outward of the bead apex), Minami suggests that said portion is preferably at least 10 millimeters (Page 9, Paragraph 66).

With respect to the claimed ratio between the bead apex and the reinforcing cord layer, Minami specifically suggests that the reinforcing cord layer have a radial height that is greater than the radial height of the bead apex by an amount equal to between

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0.1 and 0.15 times the tire section height. This relationship suggests that the reinforcing cord layer has a length that is significantly greater than the length of the bead apex. In light of this disclosure by Minami, one of ordinary skill in the art at the time of the invention would have readily appreciated and expected the tire of Minami to satisfy the broad range of the claimed invention. It is noted that Example 1 in Table 5 of Minami suggests a radial height for the reinforcing cord layer that is 1.83 times the radial height of the bead apex. In order to equate this relationship to that defined by the claimed invention, the distance L must be subtracted from the radial height of the reinforcing cord layer. While "L" is not provided for this example, Minami states that the relevant distance is less than 7 millimeters (Page 9, Paragraph 65). Thus, the minimum relationship, assuming "L" is 7 millimeters, is that the radial height of the reinforcing cord layer is 1.60 times the radial height of the bead apex. It is noted that while these relationships are with respect to the radial heights of the components and not the lengths of the components, they do suggest that the respective lengths would satisfy the broad quantitative relationship of the claimed invention.

Regarding the sidewall minimum thickness, as mentioned above, one of ordinary skill in the art at the time of the invention would have readily appreciated an embodiment in which said thickness occurs in a region between the radially outer end of the reinforcing cord layer and the tire maximum section width point. Furthermore, it is evident from Figure 7 of Minami that the maximum sidewall thickness is significantly larger than the minimum sidewall thickness. In particular, the maximum sidewall thickness is defined by a protrusion or extension that follows the contour of the rim

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flange. One of ordinary skill in the art at the time of the invention would have readily appreciated a minimum thickness that is less than 0.5 times the maximum thickness based on the figures of Minami and furthermore in light of the objectives of Minami. As set forth in Page 2, Paragraph 1, one of the primary objectives of Minami is to reduce tire weight, which is achieved by, among other things, reducing the amount of rubber in the tire sidewall. Thus, a sidewall having a small minimum thickness would have been well within the purview of one of ordinary skill in the art at the time of the invention, especially in view of the figures and disclosure of Minami. Lastly, it is noted that the depiction of the sidewalls in Figure 7 of Minami is extremely similar to that depicted by the claimed invention, further suggesting that one of ordinary skill in the art at the time of the invention would have readily appreciated the claimed relationship between the minimum and maximum thickness.

With respect to claim 2, the carcass 6 of Minami has a single ply of radially arranged cords (Paragraph 13).

As to claim 4, Minami describes the radial distance "L" (analogous to radial distance K of claimed invention), as being less than 7 millimeters. One of ordinary skill in the art at the time of the invention would have recognized this dimension as being between 0.1 and 0.5 times the length of the bead apex. For example, the radial height of the bead apex (larger than length) in Example 1 is 30 millimeters. The actual length of the bead apex would be smaller than this distance since the radial height includes the height of the bead core (from the base line BL). Thus, if the length of the bead apex

were, for example, 20 millimeters, the distance "L" would have to be between 2 and 12 millimeters, which encompasses a significant portion suggested by Minami (0-7 mm).

Regarding claim 5, as noted above, the relationship between the length of the bead apex and the reinforcing cord layer is suggested by Minami.

Regarding claim 6, it is evident from Figure 7 of Minami that the maximum thickness occurs near the radially outer end of the bead apex.

With respect to claim 7, the inner and outer sides of the triangle arrangement are the same carcass ply.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 2, 4-7 have been considered but are moot in view of the new ground(s) of rejection. Regarding Tokutake, applicant argues that the reference fails to define the claimed triangle cord arrangement, in which said arrangement is defined by the main carcass portion, the protruding portion of the reinforcing cord layer, and the turnup carcass portion. In particular, applicant argues that the carcass ply of Tokutake does not extend to a point high enough to contact the main carcass ply. The examiner agrees with this argument and since applicant has amended the claim to require this limitation, the rejection with respect to Tokutake has been withdrawn. However, newly cited Minami has been applied since it expressly depicts the claimed triangle arrangement, wherein the protruding portion of the reinforcing cord layer is sandwiched between the carcass main portion and the carcass turnup portion at a position radially outward of the bead apex (Figure 7). The additional limitations of the claimed tire construction have been addressed above.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397** (if after December 18, 2003, (571) 272-1215). The examiner can normally be reached on M-F (7:30-4:00).

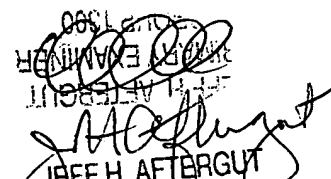
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Justin Fischer

November 12, 2003


JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300